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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,821	06/09/2002	Robert Short	H0664/7002	2143

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WOLF GREENFIELD & SACKS, PC
FEDERAL RESERVE PLAZA
600 ATLANTIC AVENUE
BOSTON, MA 02210-2211

EXAMINER

NAFF, DAVID M

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/018,821

Applicant(s)

SHORT ET AL.

Examiner

David M. Naff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

5.00

DETAILED ACTION

An amendment of 3/28/05 amended the specification and claims 23, 24, 30 and 31, and added new claim 32.

Claims examined on the merits are 1-32, which are all claims in the application.

Applicants state that claims previously examined were from the PCT as filed, and not the amended claim set in the PCT.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

Claims 1-4 and 6-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Daw et al (C1 on form 1449) or France et al (C2 on form 1449).

The claims are drawn to a therapeutic vehicle for use in tissue engineering having a cell culture surface having an acid functionality of at least 5% to which a cell can be releasably attached. The cell culture surface can be prepared by plasma polymerization of acrylic acid or a copolymer of acrylic acid and 1,7-octadiene to coat a substrate. The surface can have an acid functionality of 5-20% or greater than 20%. Also claimed is a method of preparing the cell culture surface of the vehicle.

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Daw et al and France et al disclose plasma polymerization of acrylic acid or plasma co-polymerization of acrylic acid and 1,7-octadiene on a substrate such as foil, or tissue culture wells or dishes to produce a surface containing acid functionality that binds cells and can be used for cell culture. The percent acid functionality can be in the range of 5-20% or greater than 20%. For example, see Daw et al (page 1718, under "Experimental procedure"; paragraph bridging the columns and Figure 3 on page 1720; Figures 5 and 6 on page 1722; under "Discussion" on page 1723; and under "Conclusions" on page 1724). Also see France et al (paragraph bridging pages 37 and 38; under "Cell attachment assay" and under "Characterisation of PCPs" and Table 1 on page 38; under "Discussion" on page 41; and under "conclusions" on page 42.

The cell binding surface resulting from plasma polymerization of acrylic acid or from co-polymerization of acrylic acid and 1,7-octadiene disclosed by Daw et al or France et al is the same as presently claimed. A therapeutic vehicle as required the claims is not different from the polymer or copolymer of Daw et al or France et al since the claims require no structure to distinguish the vehicle from the polymer or copolymer. The method of claims 16-31 for using plasma polymerization to produce the cell culture surface is the same

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as disclosed by Daw et al or France et al for carrying out plasma polymerization to produce a surface for binding and culturing cells.

Response to Arguments

Applicants urge that the references do not disclose a therapeutic vehicle for tissue engineering since they do not contemplate implantation of devices into a patient. However, the cell culture surface having functionality disclosed by the references is inherently capable of implanting. The present claims require no structure different than disclosed by the references that would require the claimed vehicle to be used only for implanting, and not be used for the purpose of the references.

Claim Rejections - 35 USC § 103

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daw et al or France et al in view of Yanagihara et al (4,693,799).

The claim requires propionic acid as the acid subjected to plasma polymerization to produce the cell culture surface.

Daw et al and France et al are described above.

Yanagihara et al disclose (col 6, lines 44-45 and line 58) producing a plasma polymerized film enriched in hydroxyl or

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carboxyl groups by plasma polymerizing an acid such as propionic acid.

It would have been obvious to use propionic acid in place of the acrylic acid of Daw et al or France et al since Yanagihara et al suggest that propionic acid will provide the function of acrylic acid by disclosing plasma polymerization of propionic acid to produce a film containing carboxyl groups.

Response to Arguments

The comments set forth above in response to arguments also apply to this rejection since Yanagihara et al is applied with the primary references that disclose producing a cell surface for cell culture

Double Patenting

Claims 1-4 and 6-32 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of copending Application No. 10/111,155 in view of Daw et al or France et al.

The claims of the copending application require a surface obtainable by plasma polymerization that can be produced by plasma polymerization of an acrylic acid or plasma copolymerization of acrylic acid and octa 1,7-diene.

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It would have been obvious to use the surface of the copending application claims as a cell culture surface as suggested by Daw et al or France et al using the same type of plasma produced surface for binding and culturing cells.

This is a provisional obviousness-type double patenting rejection.

Double Patenting

Claim 5 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of copending Application No. 10/111,155 in view of Daw et al or France et al as set forth above, and in further view of Yanagihara et al.

For the type of reasons set forth above when applying this reference, it would have been obvious to substitute propionic acid for the acrylic acid of the copending application claims.

Response to Arguments

Applicants' arguments are unpersuasive since the vehicle of the claims can be used for the same purpose as the device of copending application, and since the claims do not require structure that will limit the vehicle to only use for implanting.

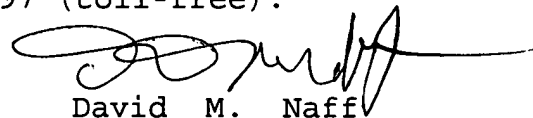
Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 751-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David M. Naff
Primary Examiner
Art Unit 1651

DMN

6/13/05